ANNUAL PROGRESS REPORT FOR THE POST REMEDIATION CARE OF THE GROUNDWATER REMEDIATION SYSTEM AT THE UTI CORPORATION SITE

UTI Corporation (now UTI Holdings, LLC (d/b/a Lake Region Medical) 200 West Seventh Ave., Trappe, PA

MAY 2017

Prepared by: Marks Environmental, Inc. 140 Bollinger Road Elverson, PA 19520

SECTION 1 INTRODUCTION

UTI Holdings LLC (UTI), has been actively remediating groundwater at their Collegeville, Pennsylvania facility located at 200 West 7th Ave., Trappe Borough, Montgomery County, Pennsylvania (site) since 1978. The site is approximately 40 acres in size.

Since 1992 remediation has been conducted under an Administrative Order on Consent, Docket No. RCRA-III-055-CA, executed by Owner and the United States Environmental Protection Agency (USEPA) in March, 1992 (Consent Order). Because the groundwater contamination at the site had been determined to be primarily present within the fractured bedrock (Brunswick Formation), and has historically involved the presence of dense non-aqueous phase liquid (DNAPL) contaminants (trichloroethylene [TCE] and 1,1,1 trichloroethane [TCA]), in 2010 UTI began discussions with the USEPA to allow the consideration of a Technical Impracticability (TI) Waiver for the site. A TI Waiver would allow the establishment of alternative points of compliance (POCs) for the site.

UTI submitted the *Technical Impracticability Determination for Groundwater Remediation, Accellent Inc., Montgomery County, Collegeville, PA* (TI Waiver Request), prepared by Marks Environmental, Inc., in June 2012. The USEPA approved the TI Waiver request for the site on August 22, 2013. A TI Zone was established, within which, attainment was deemed to be technically impracticable. POCs to facilitate ongoing groundwater monitoring, were established outside of the TI Zone.

A Post-Remediation Care Plan (PRCP) was prepared that presents the groundwater monitoring and routine operation and maintenance (O&M) requirements for the ongoing operation of the Site groundwater extraction system. Sampling and reporting requirements, and an environmental covenant (EC) (currently under review by the USEPA), that will ensure the continued protection of human health and the environment, are also included in the PRCP. Together, the PRCP and the EC will provide an enforceable mechanism for site operations following termination of the Consent Order (pending).

The PRCP was approved by the USEPA on November 20, 2015 (exclusive of the EC) and the site groundwater monitoring and reporting has been conducted under the PRCP requirements beginning in May 2016. Once approved by the USEPA, the EC will replace the Consent Order as the legal instrument under which the continued operation of the groundwater pump and treat system at the site will be conducted.

This Annual Progress Report has been prepared in accordance with the reporting requirements of the PRCP.

This report covers the period from May 2016 through February 2017. Sampling of POC monitoring wells and the TI Zone monitoring wells at the site is required annually, with the exception of POC monitoring well UTM-7. Well UTM-7 required quarterly sampling for the first year in order to establish enough data points to allow valid statistical analysis of the results, if required. The sampling requirements and well types are summarized in Table 1 below:

Table 1
Annual Groundwater Monitoring Sample Collection Locations

Well	Sampling Frequency	Sample Par	rameters and Analysis	
		Compound	EPA Analytical Method	
	Point of	of Compliance Wells		
UTM-4	Annual	TCE/TCA	8260B	
UTM-7*	Quarterly/Annual			
UTM-9	Annual			
UTM-21	Annual			
UTM-23	Annual			
		TI Zone	e Monitoring Wells	
UTM-1	Annual	TCE/TCA	8260B	
UTM-6	Annual			
UTM-8	Annual			
UTM-10	Annual			
UTM-11	Annual			
UTM-14	Annual			
UTM-17	Annual			
UTM-20	Annual			
UTM-22	Annual			
		QA/QC Samples		
Trip Blank	One per shipment	TCE/TCA	8260B	

^{*}Note: POC well UTM-7 will be monitored quarterly for four quarters, and annually thereafter, in order to establish a recent data set for the statistical analyses.

Figure 1 shows the locations of the POC and TI Zone monitoring wells. Groundwater sampling was conducted on May 31, 2016 (UTM-7 only), August 31, 2016 (UTM-7 only), November 14, 15, and 25, 2016 (annual sampling round), and February 27, 2017 (UTM-7 only). Future annual groundwater sampling events will be conducted during the First Quarter (February), consistent with the PRCP. The condition of the well network at the site is good. All monitoring wells have locked steel protective casings.

Sampling was performed using the low-flow sampling method (EPA, Puls and Barcelona, 1995), consistent with historic sampling at the site. A trip blank was submitted to the laboratory for quality assurance/quality control (QA/QC) purposes for each shipment of samples. All samples were placed into a pre-chilled cooler and submitted under chain-of-custody documentation to a Pennsylvania-certified analytical laboratory (currently TestAmerica Pittsburgh Laboratory) for TCE/TCA analysis in accordance with USEPA Method 8260B.

SECTION 2 RESULTS

Groundwater Quality

The results from the quarterly and annual sampling of the POC wells are summarized in Table 2 below.

Table 2 - Point of Compliance Groundwater Monitoring Results

	May 2016		August 2016		Nov.	2016	Feb. 2017	
WELL#	TCE	TCA	TCE	TCA	TCE	TCA	TCE	TCA
UTM-4	NA	NA	NA	NA	0.46J	1U	NA	NA
UTM-7	0.50J	5.6	0.46J	0.29J	0.49J	0.27J	1U	1U
UTM-9	NA	NA	NA	NA	0.25J	1U	NA	NA
UTM-21	NA	NA	NA	NA	0.47J	0.91J	NA	NA
UTM-23	NA	NA	NA	NA	1U	1U	NA	NA

NOTES:

All concentrations reported in micrograms per liter (µg/L).

U - Not detected, reporting limit shown

NA - Not Analyzed

J - Result is an estimated value below the laboratory reporting limit.

Table 3 – TI Zone Groundwater Monitoring Results

	Nov-17					
WELL#	TCE	TCA				
UTM-1	1300	120				
UTM-6	2.1	1.7				
UTM-8	0.37J	1U				
UTM-10	9.2J	150				
UTM-11	0.64J	1U				
UTM-14	0.90J	0.83J				
UTM-17	21	15				
UTM-20	8.6	9				
UTM-22	1.6	3				

NOTES:

All concentrations reported in micrograms per liter (µg/L).

U - Not detected, reporting limit shown

NA - Not Analyzed

J - Result is an estimated value below the laboratory reporting limit.

As seen in Table 2, there were no exceedances of the USEPA Maximum Contaminant Level (MCL) for any of the POCs during the reporting period covered in this report. The TI Zone monitoring wells detected TCE and TCA at concentrations consistent with past sampling events. The TCE and TCA concentrations continue to show a long-term decreasing trend in the site groundwater. Concentrations detected in recovery well UTM-11 have decreased significantly since the modification (deepening from 100' to 205' bgs) of this well in 2015. The average pumping rate at UTM-11 has increased significantly since the deepening of the well.

The laboratory analytical reports are included in Appendix A.

Statistical Analysis

In accordance with the PRCP, any POC that had an exceedance of an MCL during the last eight sampling rounds, will be statistically evaluated to determine whether the statistical average (95% Upper Confidence Level [UCL]) exceeds the MCL. In the event of a non-detect the laboratory reporting limit is used as the value for the purpose of statistical analysis. The statistical evaluation is discussed below.

Only one of the five POC monitoring wells (UTM-4) had an exceedance of an MCL during the last 8 sampling rounds. TCE was detected in UTM-4 at a concentration of 11 micrograms per liter (ug/L) in February 2017. The MCL for TCE is 5 ug/L.

The statistical analysis of these data are included in Appendix B to this report. This intra-well analysis found the 95% UCL for TCE in POC monitoring well UTM-4 is 4.70, below the MCL for this compound. Therefore, no further action is necessary. Sampling of all monitoring wells will continue on an annual basis in accordance with the PRCP. The next groundwater sampling round is scheduled for February 2018.

Groundwater Recovery and Influent/Effluent Monitoring

Groundwater recovery from the two recovery wells, UTM-1 and UTM-11, continued throughout the reporting period, pursuant to Section VI.A.2 of the Consent Order. The two recovery wells operated continuously, with the exception of minor down time for system maintenance. Minor repairs and upgrades of equipment (system shutdowns of less than 8 hours duration) were made during the reporting period. Additionally, the pump in recovery well UTM-1 was replaced during early September, resulting in the recovery system being shut down from September 4, 2017 to September 5, 2017. The primary recovery well UTM-1 typically pumps between 30 and 55 gallons per minute (gpm), depending upon the water table elevation. Secondary recovery well UTM-11 has been pumping continuously at between 9 to 13 gpm since the modification (deepening) of this well in September 2015.

The monthly sampling of the air stripper influent and effluent continued in compliance with Section VI.A.3 of the Consent Order. The quarterly and bimonthly sampling and analysis of Outfall 002 (discharge from the stripping tower) has continued in accordance with UTI's National Pollutant Discharge Elimination System (NPDES) permit (No. PA0042617). There were no exceedances of the NPDES permit limits during the reporting period covered in this annual report.

Water levels continue to be measured monthly at nine on-site monitoring wells in accordance with the Delaware Basin River Commission (DRBC) permit (Docket No. D-93-61 (G)-2) for groundwater extraction at the site. There were no exceedances of the withdrawal limits in the DRBC permit during the reporting period covered in this annual report.

Activity Planned for 2017/2018:

UTI will continue the operation and maintenance of the groundwater recovery system during the 2017/2018 reporting period. The Annual Groundwater Sampling Round will be conducted during February of 2018.

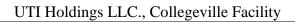
The USEPA is currently reviewing the proposed Environmental Covenant (EC) that was submitted by UTI during June 2016. Once the EC has been approved by the USEPA the Consent Order will be closed and the ongoing remedial operations at the site will be conducted under the PRCP and the EC.

The quarterly NPDES effluent sample from Outfall 002 will be collected during the 2017/2018 reporting period in accordance with UTI's NPDES permit. Monthly water levels will continue to be measured at the site during the 2017/2018 reporting period in accordance with UTI's DRBC permit.

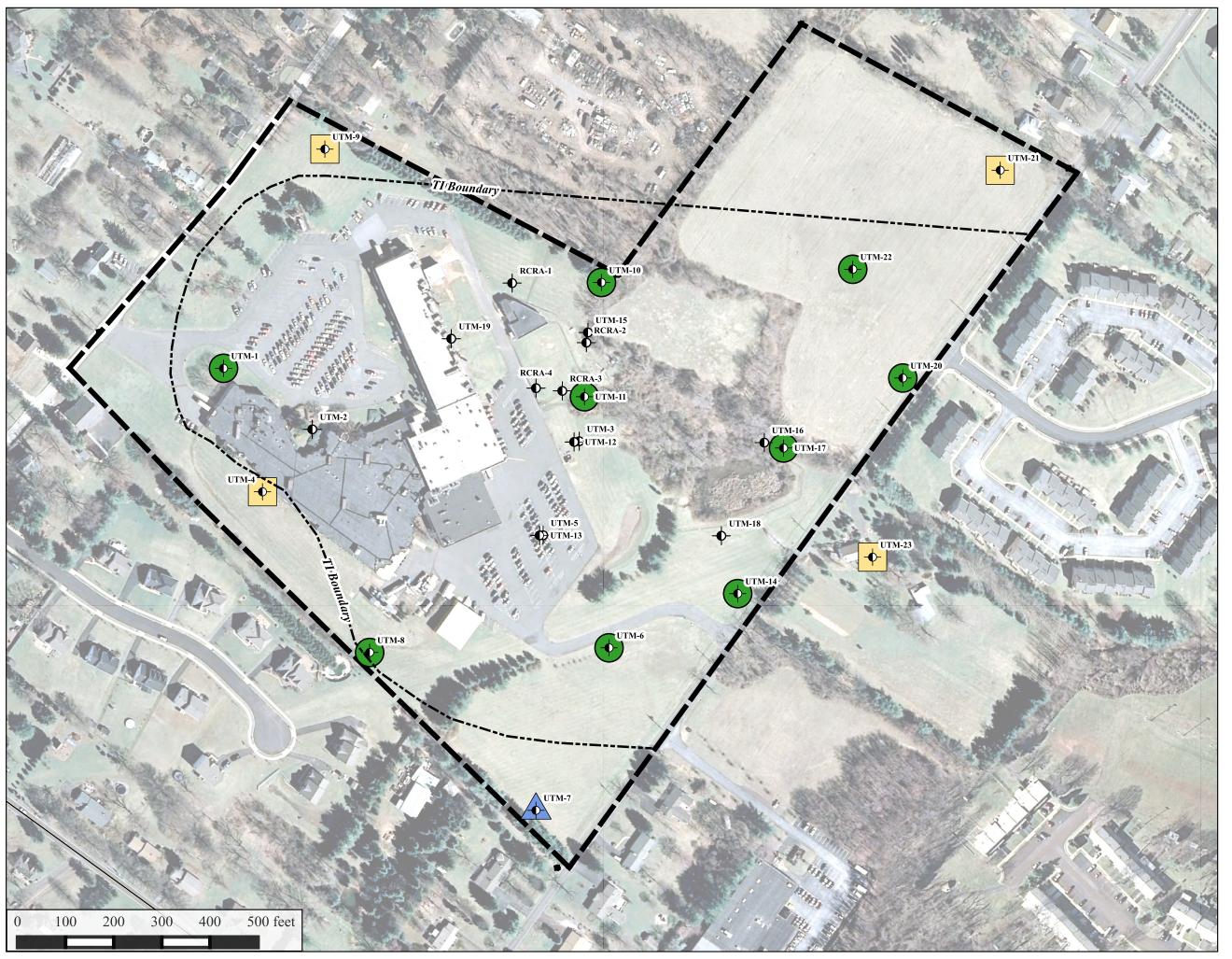
REFERENCES CITED

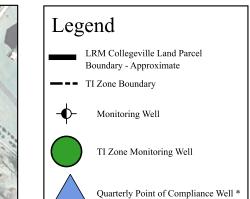
Puls, R.W. and M.J. Barcelona, December 1995, Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures, United States Environmental Protection Agency (USEPA), EPA/540/5-95/504.

Marks Environmental, Inc., June 11, 2012; Request for Technical Impracticability Determination for Groundwater Remediation, Accellent Inc., Montgomery County, Collegeville, PA.



Figures





* Quarterly sampling for four quarters, then revert to annual sampling thereafter

Annual Point of Compliance Well





Figure 1

Post-Remediation Groundwater Monitoring Points

Collegeville Pennsylvania Facility Lake Region Medical

Appendix A

Laboratory Analytical Reports



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Tel: (412)963-7058

TestAmerica Job ID: 180-55285-1

Client Project/Site: Marks, Lake Region Medical

For:

Marks Environmental, Inc. 140 Bollinger Road Elverson, Pennsylvania 19520

Attn: Mr. Tom Marks

Authorized for release by: 6/8/2016 11:20:38 PM

David Dunlap, Senior Project Manager (412)963-2432

dave.dunlap@testamericainc.com

·····LINKS ······

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Job ID: 180-55285-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative 180-55285-1

Receipt

The samples were received on 6/2/2016 9:24 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Qualifiers

GC/MS VOA

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity

EDL Estimated Detection Limit

MDC Minimum detectable concentration

MDL Method Detection Limit

ML Minimum Level (Dioxin)
NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-17

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Sample Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-55285-1	UTM-7	Water	05/31/16 16:40	06/02/16 09:24
180-55285-2	TB-5/31/16	Water	05/31/16 08:00	06/02/16 09:24

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Method Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Lab Chronicle

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Lab Sample ID: 180-55285-1

Matrix: Water

Date Collected: 05/31/16 16:40 Date Received: 06/02/16 09:24

Client Sample ID: UTM-7

Batch Dil Initial Final Batch **Batch** Prepared Number **Prep Type** Type Method Run **Factor** Amount Amount or Analyzed **Analyst** Lab Total/NA Analysis 8260C 5 mL 5 mL 178470 06/07/16 15:34 DLF TAL PIT Instrument ID: CHHP5

Client Sample ID: TB-5/31/16 Lab Sample ID: 180-55285-2

Date Collected: 05/31/16 08:00 Matrix: Water

Date Received: 06/02/16 09:24

Batch Batch Dil Initial Final Batch Prepared Method or Analyzed **Prep Type** Type Run **Factor** Amount **Amount** Number **Analyst** Total/NA 8260C 178334 06/06/16 22:16 DLF TAL PIT Analysis 5 mL 5 mL Instrument ID: CHHP6

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

DLF = Donald Ferguson

Client Sample Results

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

Lab Sample ID: 180-55285-1

. Matrix: Water

Date Collected: 05/31/16 16:40 Date Received: 06/02/16 09:24

Client Sample ID: UTM-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.6		1.0	0.29	ug/L			06/07/16 15:34	1
Trichloroethene	0.50	J	1.0	0.14	ug/L			06/07/16 15:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		72 - 120			•		06/07/16 15:34	1
Dibromofluoromethane (Surr)	113		77 - 127					06/07/16 15:34	1
1,2-Dichloroethane-d4 (Surr)	107		72 - 134					06/07/16 15:34	1
Toluene-d8 (Surr)	100		80 - 120					06/07/16 15:34	1

Client Sample ID: TB-5/31/16 Lab Sample ID: 180-55285-2

Date Collected: 05/31/16 08:00 Matrix: Water

Date Received: 06/02/16 09:24

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			06/06/16 22:16	1
Trichloroethene	ND		1.0	0.14	ug/L			06/06/16 22:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		72 - 120			:		06/06/16 22:16	1
Dibromofluoromethane (Surr)	98		77 - 127					06/06/16 22:16	1
1,2-Dichloroethane-d4 (Surr)	100		72 - 134					06/06/16 22:16	1
	96		80 - 120					06/06/16 22:16	

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Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical

Method: 8260C - Volatile Organic Compounds (GC/MS)

MD MD

Lab Sample ID: MB 180-178334/6

Matrix: Water

Analysis Batch: 178334

Client Sample ID: Method Blank

Prep Type: Total/NA

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			06/06/16 13:01	1
Trichloroethene	ND		1.0	0.14	ug/L			06/06/16 13:01	1

MB MB Qualifier Surrogate %Recovery I imits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 106 72 - 120 06/06/16 13:01 Dibromofluoromethane (Surr) 98 77 - 127 06/06/16 13:01 97 72 - 134 06/06/16 13:01 1,2-Dichloroethane-d4 (Surr) 96 80 - 120 06/06/16 13:01 Toluene-d8 (Surr)

Lab Sample ID: LCS 180-178334/9

Matrix: Water

Analyte

Analysis Batch: 178334

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec. Added Result Qualifier Unit D %Rec Limits 1,1,1-Trichloroethane 10.0 9.03 ug/L 90 57 - 128 10.0 Trichloroethene 11.1 ug/L 111 79 - 120

LCS LCS Surrogate %Recovery Qualifier Limits 102 72 - 120 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) 97 77 - 127 1,2-Dichloroethane-d4 (Surr) 97 72 - 134 Toluene-d8 (Surr) 100 80 - 120

Lab Sample ID: LCSD 180-178334/10

Matrix: Water

Analysis Batch: 178334

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	8.80		ug/L		88	57 - 128	3	19
Trichloroethene	10.0	10.7		ug/L		107	79 - 120	4	15

LCSD LCSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 102 72 - 120 Dibromofluoromethane (Surr) 97 77 - 127 1,2-Dichloroethane-d4 (Surr) 96 72 - 134 100 80 - 120 Toluene-d8 (Surr)

Lab Sample ID: MB 180-178470/4

Matrix: Water

Analysis Batch: 178470

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,1,1-Trichloroethane ND 1.0 0.29 ug/L 06/07/16 12:44 Trichloroethene ND 1.0 06/07/16 12:44 0.14 ug/L

MB MB

Qualifier Limits Prepared Dil Fac Surrogate %Recovery Analyzed 4-Bromofluorobenzene (Surr) 103 72 - 120 06/07/16 12:44

TestAmerica Pittsburgh

TestAmerica Job ID: 180-55285-1

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical

estAmerica Job ID. 160-55265-

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-178470/4

Matrix: Water

Surrogate

Analysis Batch: 178470

Dibromofluoromethane (Surr)

1,2-Dichloroethane-d4 (Surr)

Client Sample ID: Method Blank Prep Type: Total/NA

 MB
 MB

 %Recovery
 Qualifier
 Limits
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 115
 77 - 127
 06/07/16 12:44
 1

 109
 72 - 134
 06/07/16 12:44
 1

 105
 80 - 120
 06/07/16 12:44
 1

Lab Sample ID: LCS 180-178470/5

Matrix: Water

Toluene-d8 (Surr)

Analysis Batch: 178470

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Бріке	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	 10.0	9.17		ug/L		92	57 - 128	
Trichloroethene	10.0	10.8		ua/l		108	79 120	

LCS LCS %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 94 72 - 120 77 - 127 Dibromofluoromethane (Surr) 100 1,2-Dichloroethane-d4 (Surr) 97 72 - 134 Toluene-d8 (Surr) 107 80 - 120

Lab Sample ID: LCSD 180-178470/6

Matrix: Water

Analysis Batch: 178470

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	9.15		ug/L		91	57 - 128	0	19
Trichloroethene	10.0	10.4		ug/L		104	79 - 120	4	15

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		72 - 120
Dibromofluoromethane (Surr)	101		77 - 127
1,2-Dichloroethane-d4 (Surr)	104		72 - 134
Toluene-d8 (Surr)	104		80 - 120

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QC Association Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-55285-1

GC/MS VOA

Analysis Batch: 178334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-55285-2	TB-5/31/16	Total/NA	Water	8260C	
LCS 180-178334/9	Lab Control Sample	Total/NA	Water	8260C	
LCSD 180-178334/10	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 180-178334/6	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 178470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-55285-1	UTM-7	Total/NA	Water	8260C	
LCS 180-178470/5	Lab Control Sample	Total/NA	Water	8260C	
LCSD 180-178470/6	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 180-178470/4	Method Blank	Total/NA	Water	8260C	

Jample Specific Notes: SOCS Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) For Lab Use Only: ٠. ف Walk-in Client: ₽ COC No: Date/Time: Archive for 180-55285 Chain of Custody Company: Company: Compagn Date: 6 Disposal by Lab Carrier: SAIN Cooler Temp. (°C): Obs Site Contact: Tom Marks Durko Received in Laboratory by: Received By ULL V Lab Contact: 🎧 😢 Return to Client Date/Time: 0334 Received by: Perform MS/MSD (Y/V) 5 5 5 5 Date/Time (b 10 6 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. 4 # of Cont. Project Manager: 7 trze Marks M 5/21/16 WORKING DAYS <u>১</u> Matrix Analysis Turnaround Time 3 Type (C=Comp, G=Grab) Sample TAT if different from Below B b 2 weeks 1 week 2 days Sample Time Company: 5/31/16 1640 080c CALENDAR DAYS Preservation Used: 1=1ce, 2= HCl, 3= H2SO4: 4=HNO3: 5=NaOH; 6= Other Custody Seal No. 5/31/16 Poison B Sample Date Sompany: Company: Environmenta) TellFax. るかと Project Name: Lake Kegylon Medical Special Instructions/QC Requirements & Comments: δ. [] 0000 Company Name: Marks Line TB-8/31/16 Sample Identification Collegenilla 1878C いかんかっ Possible Hazard Identification: Custody Seals Intact: Phone: 610 Non-Hazard Relinquished Relinquish PO#

THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.

TAL-8210 (0713)

POSTATION OF THE PROPERTY OF T

128419

Chain of Custody Record

X Other:

RCRA

Regulatory Program: Dw INPDES

Fittsburgh, PA 15238 Phone: #12 963, 7858 Fax: #12, 963, 2478

CTHRICA TECHNO

Login Sample Receipt Checklist

Client: Marks Environmental, Inc. Job Number: 180-55285-1

Login Number: 55285 List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Watson, Debbie

Creator: Watson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Tel: (412)963-7058

TestAmerica Job ID: 180-58296-1

Client Project/Site: Marks, Lake Region Medical

For:

Marks Environmental, Inc. 140 Bollinger Road Elverson, Pennsylvania 19520

Attn: Mr. Tom Marks

Authorized for release by: 9/19/2016 10:23:50 AM

David Dunlap, Senior Project Manager (412)963-2432

dave.dunlap@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Job ID: 180-58296-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative 180-58296-1

Receipt

The samples were received on 9/2/2016 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Qualifiers

GC/MS VOA

Qualifier Qualifier Description

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration MDA Minimum detectable activity **EDL Estimated Detection Limit** MDC Minimum detectable concentration

MDL Method Detection Limit MLMinimum Level (Dioxin) NC Not Calculated

Not detected at the reporting limit (or MDL or EDL if shown) ND

PQL Practical Quantitation Limit

Quality Control QC **RER** Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-17

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Sample Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-58296-1	UTM-7	Water	08/31/16 11:25	09/02/16 09:00
180-58296-2	TRIP BLANK	Water	08/31/16 08:00	09/02/16 09:00

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Method Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Lab Chronicle

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Lab Sample ID: 180-58296-1

Matrix: Water

Date Collected: 08/31/16 11:25 Date Received: 09/02/16 09:00

Client Sample ID: UTM-7

Batch Batch Dil Initial Batch Final Prepared Method Factor **Prep Type** Type Run **Amount Amount** Number or Analyzed **Analyst** Lab Total/NA Analysis 8260C 5 mL 5 mL 187330 09/08/16 18:18 DLF TAL PIT Instrument ID: CHHP5

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-58296-2

Date Collected: 08/31/16 08:00 Matrix: Water

Date Received: 09/02/16 09:00

Batch Batch Dil Initial Final Batch Prepared Method or Analyzed **Prep Type** Type Run **Factor Amount** Amount Number **Analyst** Total/NA 8260C 5 mL 187330 09/08/16 19:07 DLF TAL PIT Analysis 5 mL Instrument ID: CHHP5

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

DLF = Donald Ferguson

Client Sample Results

Client: Marks Environmental, Inc.

Client Sample ID: UTM-7

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-58296-1

Lab Sample ID: 180-58296-1

. Matrix: Water

Date Collected: 08/31/16 11:25
Date Received: 09/02/16 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.29	J	1.0	0.22	ug/L			09/08/16 18:18	1
Trichloroethene	0.46	J	1.0	0.26	ug/L			09/08/16 18:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		72 - 120			•		09/08/16 18:18	1
Dibromofluoromethane (Surr)	109		77 - 127					09/08/16 18:18	1
1,2-Dichloroethane-d4 (Surr)	114		72 - 134					09/08/16 18:18	1
Toluene-d8 (Surr)	100		80 - 120					09/08/16 18:18	1

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-58296-2

Date Collected: 08/31/16 08:00 Matrix: Water

Date Received: 09/02/16 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.22	ug/L			09/08/16 19:07	1
Trichloroethene	ND		1.0	0.26	ug/L			09/08/16 19:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		72 - 120					09/08/16 19:07	1
Dibromofluoromethane (Surr)	108		77 - 127					09/08/16 19:07	1
1,2-Dichloroethane-d4 (Surr)	118		72 - 134					09/08/16 19:07	1
			80 - 120					09/08/16 19:07	

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QC Sample Results

Client: Marks Environmental, Inc.

TestAmerica Job ID: 180-58296-1

Project/Site: Marks, Lake Region Medical

Method: 8260C - Volatile Organic Compounds (GC/MS)

MD MD

Lab Sample ID: MB 180-187330/5

Matrix: Water

Analysis Batch: 187330

Client Sam	ple ID:	Metho	od Bl	ank
	Prep 1	Гуре: Т	Total	/NA

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	1.0	0.22 ug/L			09/08/16 12:26	1
Trichloroethene	ND	1.0	0.26 ug/L			09/08/16 12:26	1

	MB MB				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93	72 - 120		09/08/16 12:26	1
Dibromofluoromethane (Surr)	113	77 - 127		09/08/16 12:26	1
1,2-Dichloroethane-d4 (Surr)	113	72 - 134		09/08/16 12:26	1
Toluene-d8 (Surr)	96	80 - 120	(09/08/16 12:26	1

Lab Sample ID: LCS 180-187330/8

Matrix: Water

1,1,1-Trichloroethane

Trichloroethene

Analyte

Analysis Batch: 187330

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits 10.0 9.33 ug/L 93 57 - 128 10.0 10.3 ug/L 103 79 - 120

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		72 - 120
Dibromofluoromethane (Surr)	100		77 - 127
1,2-Dichloroethane-d4 (Surr)	102		72 - 134
Toluene-d8 (Surr)	92		80 - 120

TestAmerica Pittsburgh

QC Association Summary

Client: Marks Environmental, Inc.

TestAmerica Job ID: 180-58296-1 Project/Site: Marks, Lake Region Medical

GC/MS VOA

Analysis Batch: 187330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-58296-1	UTM-7	Total/NA	Water	8260C	
180-58296-2	TRIP BLANK	Total/NA	Water	8260C	
MB 180-187330/5	Method Blank	Total/NA	Water	8260C	
LCS 180-187330/8	Lab Control Sample	Total/NA	Water	8260C	

146709 PT 146709	X Other:	Date: 8/3/// COC No:	Dina (4 to Carrier: /	Sampler. For Lab Use Only:	Walk-in Clent: Lab Sampling:	Job / SDG No.	Sample Speaffic Notes.					180-58296 Chain of Custody			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	Return to Client		Cooler Temp. (*C): Qbs'd: Corr'd: Therm ID No	1501 9 Million Company (Colored March 1051)	ellec Water Company.	Received in Laboratory by: Company: Date/Time:
2 2	□ RGW	Site Contact:	Lab Contact: D,		(N //		EM micheq	MM.	, N.W.										Received by:	Receivedby	Receive
	MPDRS	0,		DAYS			# of Cont.	3	1 2						Waste Codes for the sample in the				Date/Time: 3/1/16 0820	Dalb/ITIMe: 1 100	Dátá/Time:
	₩: □	THINDES		Analysis Tumaround Time	relow (s)	\ × 10	Sample Type (C=Comp. G=Comp.	6 1130	5				\dashv	+	des for the s	Unimown			Date (1/)	80	Dát
	Regulatory Program:			Albana Turm	different from Below	1 week 2 days	Sample (c	Sell	0 280				+		A Waste Co			í No.:		9	
	Regulat	Project Manager:	Tel/Fax:		TAT # diff	عما	40	8/31/16	8/31/16						e List any EP	Poison B		Custody Seal	Company:	STATE OF	Company:
301 Alpha Brive	Pittsburgh, På 15238 Phone: 412.963.7058 Fax: 412.963.2470		Company Name: Manus Edvi Man Manue		60	Site: LAKE REFIGE MEDICAL	Sample Identification		PBlank						Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Comments Section if the lab is to dispuse of the sample	Whon-Hazard Skin Infant	ctions/QC	Custody Seals Intact: [] Yes [] No	Reimquished by	Relinquished by Mindle	Réfnauished by:

Login Sample Receipt Checklist

Client: Marks Environmental, Inc.

Job Number: 180-58296-1

Login Number: 58296 List Source: TestAmerica Pittsburgh

List Number: 1 Creator: Kubit, Eric

Creator: Kubit, Eric		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Tel: (412)963-7058

TestAmerica Job ID: 180-60977-1

Client Project/Site: Marks, Lake Region Medical

For:

Marks Environmental, Inc. 140 Bollinger Road Elverson, Pennsylvania 19520

Attn: Mr. Tom Marks

Authorized for release by: 11/25/2016 9:02:00 AM

David Dunlap, Senior Project Manager (412)963-2432

dave.dunlap@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical TestAmerica Job ID: 180-60977-1

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Case Narrative

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-60977-1

Job ID: 180-60977-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative 180-60977-1

Receipt

The samples were received on 11/18/2016 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7° C.

GC/MS VOA

Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: UTM-10 (180-60977-6) and UTM-1 (180-60977-11). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Definitions/Glossary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-60977-1

Qualifiers

GC/MS VOA

Qualifier Qualifier Description

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Not detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Quality Control

Relative error ratio

Ε Result exceeded calibration range.

Glossary

ND

PQL

QC

RER

RPD

TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated

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11/25/2016

Certification Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-60977-1

Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-17

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Sample Summary

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical TestAmerica Job ID: 180-60977-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-60977-1	UTM-4	Water	11/14/16 13:03	11/18/16 09:00
180-60977-2	UTM-6	Water	11/15/16 11:43	11/18/16 09:00
180-60977-3	UTM-7	Water	11/14/16 10:22	11/18/16 09:00
180-60977-4	UTM-8	Water	11/14/16 11:49	11/18/16 09:00
180-60977-5	UTM-9	Water	11/14/16 14:28	11/18/16 09:00
180-60977-6	UTM-10	Water	11/14/16 16:53	11/18/16 09:00
180-60977-7	UTM-14	Water	11/15/16 13:19	11/18/16 09:00
180-60977-8	UTM-17	Water	11/15/16 14:43	11/18/16 09:00
180-60977-9	UTM-20	Water	11/15/16 16:09	11/18/16 09:00
180-60977-10	UTM-22	Water	11/15/16 10:09	11/18/16 09:00
180-60977-11	UTM-1	Water	11/14/16 11:15	11/18/16 09:00
180-60977-12	UTM-11	Water	11/14/16 10:25	11/18/16 09:00
180-60977-13	UTM-23	Water	11/15/16 16:20	11/18/16 09:00
180-60977-14	TRIP BLANK	Water	11/14/16 08:00	11/18/16 09:00

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Method Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-60977-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

Lab Sample ID: 180-60977-1

Matrix: Water

Date Collected: 11/14/16 13:03 Date Received: 11/18/16 09:00

Client Sample ID: UTM-4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	195015	11/21/16 19:17	DLF	TAL PIT
	Instrument	ID: CHHP5								

Client Sample ID: UTM-6 Lab Sample ID: 180-60977-2 Date Collected: 11/15/16 11:43

Matrix: Water

Date Received: 11/18/16 09:00

Duan Tuna	Batch	Batch	Design	Dil	Initial	Final	Batch	Prepared	A a l a 4	Lab
Prep Type Total/NA	Type Analysis	Method 8260C	Run	Factor 1	5 mL	Amount 5 mL	Number 195015	or Analyzed 11/21/16 19:41	Analyst DLF	TAL PIT
	Instrument	ID: CHHP5								

Client Sample ID: UTM-7 Lab Sample ID: 180-60977-3

Matrix: Water

Date Collected: 11/14/16 10:22 Date Received: 11/18/16 09:00

Dil Batch Initial Final Batch **Batch** Prepared **Prep Type** Method Amount Number or Analyzed Type Run Factor Amount Analyst Lab Total/NA 8260C 195015 11/21/16 20:29 DLF TAL PIT Analysis 5 ml 5 ml Instrument ID: CHHP5

Client Sample ID: UTM-8 Lab Sample ID: 180-60977-4 Date Collected: 11/14/16 11:49

Matrix: Water

Date Received: 11/18/16 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	195015	11/21/16 22:54	DLF	TAL PIT
	Instrument	ID: CHHP5								

Client Sample ID: UTM-9 Lab Sample ID: 180-60977-5 Date Collected: 11/14/16 14:28 **Matrix: Water**

Date Received: 11/18/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	195015	11/21/16 23:18	DLF	TAL PIT
	Instrumer	nt ID: CHHP5								

Client Sample ID: UTM-10 Lab Sample ID: 180-60977-6

Date Collected: 11/14/16 16:53 **Matrix: Water** Date Received: 11/18/16 09:00

Dil Batch Batch Initial Final Batch Prepared Method **Prep Type** Type Number or Analyzed Run **Factor** Amount Amount **Analyst** Lab Total/NA Analysis 8260C 195015 11/21/16 20:53 DLF TAL PIT 5 mL 5 mL

Instrument ID: CHHP5

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

Client Sample ID: UTM-10

Lab Sample ID: 180-60977-6

Matrix: Water

Matrix: Water

Matrix: Water

Date Collected: 11/14/16 16:53 Date Received: 11/18/16 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C	DL	10	5 mL	5 mL	195150	11/22/16 14:48	DLF	TAL PIT
	Instrument	ID: CHHP5								

Client Sample ID: UTM-14 Lab Sample ID: 180-60977-7

Date Collected: 11/15/16 13:19 **Matrix: Water**

Date Received: 11/18/16 09:00

Prep Type Total/NA	Batch Type Analysis	Batch Method 8260C	Run	Pactor 1	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 195015	Prepared or Analyzed 11/21/16 21:41	Analyst DLF	Lab TAL PIT
	Instrumen	t ID: CHHP5								

Lab Sample ID: 180-60977-8 Client Sample ID: UTM-17 **Matrix: Water**

Date Collected: 11/15/16 14:43 Date Received: 11/18/16 09:00

Dil Batch **Batch** Initial Final Batch Prepared Prep Type Type Method Run **Factor Amount** Amount Number or Analyzed Analyst Lab Total/NA Analysis 8260C 5 mL 195015 11/21/16 22:06 DLF TAL PIT 5 mL Instrument ID: CHHP5

Client Sample ID: UTM-20 Lab Sample ID: 180-60977-9

Date Collected: 11/15/16 16:09 Date Received: 11/18/16 09:00

Batch Batch Dil Initial Final **Batch** Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 8260C 195015 11/21/16 22:30 DLF Analysis 5 mL 5 mL TAL PIT Instrument ID: CHHP5

Client Sample ID: UTM-22 Lab Sample ID: 180-60977-10

Date Collected: 11/15/16 10:09

Date Received: 11/18/16 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis Instrument	8260C ID: CHHP5		1	5 mL	5 mL	195150	11/22/16 16:00	DLF	TAL PIT

Client Sample ID: UTM-1 Lab Sample ID: 180-60977-11 **Matrix: Water**

Date Collected: 11/14/16 11:15 Date Received: 11/18/16 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		100	5 mL	5 mL	195150	11/22/16 15:12	DLF	TAL PIT
	. ,	nt ID: CHHP5				- · · · · ·				

Lab Chronicle

Client: Marks Environmental, Inc.

Client Sample ID: UTM-11

Date Collected: 11/14/16 10:25

Date Received: 11/18/16 09:00

Total/NA

Project/Site: Marks, Lake Region Medical

Analysis

TestAmerica Job ID: 180-60977-1

Lab Sample ID: 180-60977-12

11/22/16 16:24

DLF

TAL PIT

Matrix: Water

Batch Dil Initial Final Batch Batch Prepared **Prep Type** Type Method Run **Factor** Amount **Amount** Number or Analyzed **Analyst**

Instrument ID: CHHP5

8260C

Client Sample ID: UTM-23 Lab Sample ID: 180-60977-13

5 mL

5 mL

195150

Date Collected: 11/15/16 16:20 **Matrix: Water**

Date Received: 11/18/16 09:00

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run **Factor Amount** Amount Number or Analyzed Analyst Lab Total/NA Analysis 8260C 5 mL 5 mL 195150 11/22/16 15:36 DLF TAL PIT Instrument ID: CHHP5

Client Sample ID: TRIP BLANK Lab Sample ID: 180-60977-14

Date Collected: 11/14/16 08:00 **Matrix: Water**

Date Received: 11/18/16 09:00

Dil Batch **Batch** Initial Final **Batch** Prepared Prep Type Type Method Run **Factor Amount** Amount Number or Analyzed **Analyst** Lab Total/NA 8260C 195015 11/21/16 21:17 DLF TAL PIT Analysis 5 mL 5 mL Instrument ID: CHHP5

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis DLF = Donald Ferguson

Lab Sample ID: 180-60977-1

Client Sample ID: UTM-4 Date Collected: 11/14/16 13:03 Date Received: 11/18/16 09:00

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			11/21/16 19:17	1
Trichloroethene	0.46	J	1.0	0.20	ug/L			11/21/16 19:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 120			•		11/21/16 19:17	1
Dibromofluoromethane (Surr)	97		77 - 127					11/21/16 19:17	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 134					11/21/16 19:17	1
Toluene-d8 (Surr)	102		80 - 120					11/21/16 19:17	1

Client Sample ID: UTM-6 Lab Sample ID: 180-60977-2

Date Collected: 11/15/16 11:43 Matrix: Water

Date Received: 11/18/16 09:00

Method: 8260C - Volatile C Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7		1.0	0.27	ug/L			11/21/16 19:41	1
Trichloroethene	2.1		1.0	0.20	ug/L			11/21/16 19:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		72 - 120					11/21/16 19:41	1
Dibromofluoromethane (Surr)	96		77 - 127					11/21/16 19:41	1
1,2-Dichloroethane-d4 (Surr)	93		72 - 134					11/21/16 19:41	1

Client Sample ID: UTM-7 Lab Sample ID: 180-60977-3 Date Collected: 11/14/16 10:22 **Matrix: Water**

Date Received: 11/18/16 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.27	J	1.0	0.27	ug/L			11/21/16 20:29	1
Trichloroethene	0.49	J	1.0	0.20	ug/L			11/21/16 20:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		72 - 120			•		11/21/16 20:29	1
Dibromofluoromethane (Surr)	97		77 - 127					11/21/16 20:29	1
1,2-Dichloroethane-d4 (Surr)	92		72 - 134					11/21/16 20:29	1
Toluene-d8 (Surr)	104		80 - 120					11/21/16 20:29	

Lab Sample ID: 180-60977-4 **Client Sample ID: UTM-8** Date Collected: 11/14/16 11:49 **Matrix: Water**

Date Received: 11/18/16 09:00

Method: 8260C - Volatile Org	ganic Compo	unds (GC/	MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			11/21/16 22:54	1
Trichloroethene	0.37	J	1.0	0.20	ug/L			11/21/16 22:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		72 - 120			-		11/21/16 22:54	1
Dibromofluoromethane (Surr)	102		77 - 127					11/21/16 22:54	1

TestAmerica Pittsburgh

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Lab Sample ID: 180-60977-4

Client Sample ID: UTM-8 Date Collected: 11/14/16 11:49 Date Received: 11/18/16 09:00

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		72 - 134		11/21/16 22:54	1
Toluene-d8 (Surr)	103		80 - 120		11/21/16 22:54	1

Client Sample ID: UTM-9 Lab Sample ID: 180-60977-5 Date Collected: 11/14/16 14:28 **Matrix: Water** Date Received: 11/18/16 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			11/21/16 23:18	1
Trichloroethene	0.25	J	1.0	0.20	ug/L			11/21/16 23:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		72 - 120			,		11/21/16 23:18	1
Dibromofluoromethane (Surr)	102		77 - 127					11/21/16 23:18	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 134					11/21/16 23:18	1
Toluene-d8 (Surr)	103		80 - 120					11/21/16 23:18	

Client Sample ID: UTM-10 Lab Sample ID: 180-60977-6 Date Collected: 11/14/16 16:53 **Matrix: Water**

Date Received: 11/18/16 09:00

Method: 8260C - Volatile O	rganic Compo	unds (GC/	MS)						
Analyte	Result	Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	170	E	1.0	0.27	ug/L			11/21/16 20:53	1
Trichloroethene	10		1.0	0.20	ug/L			11/21/16 20:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		72 - 120					11/21/16 20:53	1
Dibromofluoromethane (Surr)	98		77 - 127					11/21/16 20:53	1
1,2-Dichloroethane-d4 (Surr)	91		72 - 134					11/21/16 20:53	1
Toluene-d8 (Surr)	108		80 - 120					11/21/16 20:53	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	150		10	2.7	ug/L			11/22/16 14:48	10
Trichloroethene	9.2	J	10	2.0	ug/L			11/22/16 14:48	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		72 - 120			:		11/22/16 14:48	10
Dibromofluoromethane (Surr)	97		77 - 127					11/22/16 14:48	10
1,2-Dichloroethane-d4 (Surr)	92		72 - 134					11/22/16 14:48	10
Toluene-d8 (Surr)	99		80 - 120					11/22/16 14:48	10

Client Sample ID: UTM-14 Lab Sample ID: 180-60977-7 Date Collected: 11/15/16 13:19 **Matrix: Water**

Date Received: 11/18/16 09:00

Method: 8260C - Volatile Orga	nic Compo	unds (GC/	MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.83	J	1.0	0.27	ug/L			11/21/16 21:41	1

TestAmerica Job ID: 180-60977-1

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical

Client Sample ID: UTM-14

Lab Sample ID: 180-60977-7

Matrix: Water

Date Collected: 11/15/16 13:19 Date Received: 11/18/16 09:00

Toluene-d8 (Surr)

Method: 8260C - Volatile Orga	inic Compo	unds (GC/	MS) (Continu	ied)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.90	J	1.0	0.20	ug/L			11/21/16 21:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		72 - 120			-		11/21/16 21:41	1
Dibromofluoromethane (Surr)	102		77 - 127					11/21/16 21:41	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 134					11/21/16 21:41	1
	Analyte Trichloroethene Surrogate 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	Analyte Result Trichloroethene 0.90 Surrogate %Recovery 4-Bromofluorobenzene (Surr) 98 Dibromofluoromethane (Surr) 102	Analyte Result Qualifier Trichloroethene 0.90 J Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 98 Dibromofluoromethane (Surr) 102	Analyte Result Trichloroethene Qualifier Qualifier RL Qualifier Surrogate %Recovery Qualifier Limits Qualifier 4-Bromofluorobenzene (Surr) 98 72 - 120 Dibromofluoromethane (Surr) 102 77 - 127	Trichloroethene 0.90 J 1.0 0.20 Surrogate %Recovery 4-Bromofluorobenzene (Surr) Qualifier 98 Limits 72 - 120 Dibromofluoromethane (Surr) 102 77 - 127	Analyte Result Trichloroethene Qualifier Qualifie	Analyte Result Trichloroethene Qualifier Qualifie	Analyte Result Qualifier RL MDL Unit D Prepared Trichloroethene 0.90 J 1.0 0.20 ug/L Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 98 72 - 120 Dibromofluoromethane (Surr) 102 77 - 127	Analyte Result Trichloroethene Qualifier Qualifie

Lab Sample ID: 180-60977-8 Client Sample ID: UTM-17

80 - 120

100

Date Collected: 11/15/16 14:43 Date Received: 11/18/16 09:00

Matrix: Water

11/21/16 21:41

Method: 8260C - Volatile Organic Compounds (GC/MS) Result Qualifier Analyte RL **MDL** Unit D Prepared Analyzed Dil Fac 1,1,1-Trichloroethane 15 1.0 0.27 ug/L 11/21/16 22:06 **Trichloroethene** 21 1.0 0.20 ug/L 11/21/16 22:06 %Recovery Qualifier Dil Fac Surrogate I imits Prepared Analyzed

4-Bromofluorobenzene (Surr) 95 72 - 120 11/21/16 22:06 97 Dibromofluoromethane (Surr) 77 - 127 11/21/16 22:06 1,2-Dichloroethane-d4 (Surr) 92 72 - 134 11/21/16 22:06 Toluene-d8 (Surr) 104 80 - 120 11/21/16 22:06

Client Sample ID: UTM-20 Lab Sample ID: 180-60977-9 **Matrix: Water**

Date Collected: 11/15/16 16:09 Date Received: 11/18/16 09:00

Method: 8260C - Volatile O	rganic Compo	unds (GC/	MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	9.0		1.0	0.27	ug/L			11/21/16 22:30	1
Trichloroethene	8.6		1.0	0.20	ug/L			11/21/16 22:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		72 - 120					11/21/16 22:30	1
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	97 104		72 - 120 77 - 127					11/21/16 22:30 11/21/16 22:30	1 1
` '									1 1 1

Client Sample ID: UTM-22 Lab Sample ID: 180-60977-10

Date Collected: 11/15/16 10:09 Date Received: 11/18/16 09:00

Matrix: Water

Analyte	•	unds (GC/ Qualifier	IVIS) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	3.0		1.0		ug/L	<u> </u>	Tropulou	11/22/16 16:00	1
Trichloroethene	1.6		1.0	0.20	ug/L			11/22/16 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		72 - 120			-		11/22/16 16:00	1
Dibromofluoromethane (Surr)	100		77 - 127					11/22/16 16:00	1
1.2-Dichloroethane-d4 (Surr)	96		72 - 134					11/22/16 16:00	1

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Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical

Client Sample ID: UTM-22

Date Collected: 11/15/16 10:09 Date Received: 11/18/16 09:00

Lab Sample ID: 180-60977-10

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Method: 8260C - Volatile Organic Compounds (GC/MS)

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 99 80 - 120 11/22/16 16:00

Client Sample ID: UTM-1 Lab Sample ID: 180-60977-11

Date Collected: 11/14/16 11:15 Date Received: 11/18/16 09:00

Matrix: Water

Result Qualifier Analyte RL **MDL** Unit D Analyzed Dil Fac Prepared 1,1,1-Trichloroethane 100 27 ug/L 11/22/16 15:12 100 120 100 11/22/16 15:12 **Trichloroethene** 1300 20 ug/L 100 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 97 72 - 120 11/22/16 15:12 100

Dibromofluoromethane (Surr) 97 77 - 127 11/22/16 15:12 100 1,2-Dichloroethane-d4 (Surr) 91 72 - 134 11/22/16 15:12 100 Toluene-d8 (Surr) 97 80 - 120 11/22/16 15:12 100

Client Sample ID: UTM-11 Lab Sample ID: 180-60977-12 Date Collected: 11/14/16 10:25 **Matrix: Water**

Date Received: 11/18/16 09:00

Method: 8260C - Volatile Organic Compounds (GC/MS) Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac ND 1,1,1-Trichloroethane 1.0 0.27 ug/L 11/22/16 16:24 **Trichloroethene** 0.64 J 1.0 0.20 ug/L 11/22/16 16:24

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91	72 - 120		11/22/16 16:24	1
Dibromofluoromethane (Surr)	101	77 - 127		11/22/16 16:24	1
1,2-Dichloroethane-d4 (Surr)	98	72 - 134		11/22/16 16:24	1
Toluene-d8 (Surr)	100	80 - 120		11/22/16 16:24	1

Client Sample ID: UTM-23 Lab Sample ID: 180-60977-13

Date Collected: 11/15/16 16:20 **Matrix: Water** Date Received: 11/18/16 09:00

Method: 8260C - Volatile Organic Compounds (GC/MS) Result Qualifier Analyte

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			11/22/16 15:36	1
Trichloroethene	ND		1.0	0.20	ug/L			11/22/16 15:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		72 - 120					11/22/16 15:36	
Dibromofluoromethane (Surr)	99		77 - 127					11/22/16 15:36	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 134					11/22/16 15:36	1
Toluene-d8 (Surr)	100		80 - 120					11/22/16 15:36	1

Client Sample Results

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical TestAmerica Job ID: 180-60977-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-60977-14

Matrix: Water

Date Collected: 11/14/16 08:00 Date Received: 11/18/16 09:00

Method: 8260C - Volatile O	rganic Compo	unds (GC/	MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			11/21/16 21:17	1
Trichloroethene	ND		1.0	0.20	ug/L			11/21/16 21:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 120			•		11/21/16 21:17	1
Dibromofluoromethane (Surr)	102		77 - 127					11/21/16 21:17	1
1,2-Dichloroethane-d4 (Surr)	96		72 - 134					11/21/16 21:17	1
Toluene-d8 (Surr)	96		80 - 120					11/21/16 21:17	1

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-195015/8

Matrix: Water

1,1,1-Trichloroethane

Trichloroethene

Analyte

Analysis Batch: 195015

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac 1.0 0.27 ug/L 11/21/16 13:02 ND ND 1.0 11/21/16 13:02 0.20 ug/L

	MB MB			
Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100	72 - 120	11/21/16 13:02	
Dibromofluoromethane (Surr)	98	77 - 127	11/21/16 13:02	1
1,2-Dichloroethane-d4 (Surr)	95	72 - 134	11/21/16 13:02	1
Toluene-d8 (Surr)	103	80 - 120	11/21/16 13:02	1

Lab Sample ID: LCS 180-195015/10

Matrix: Water

Analysis Batch: 195015

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 1,1,1-Trichloroethane 10.0 10.1 ug/L 101 57 - 128 10.0 103 Trichloroethene 10.3 ug/L 79 - 120

LCS LCS Surrogate %Recovery Qualifier Limits 103 72 - 120 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) 94 77 - 127 1,2-Dichloroethane-d4 (Surr) 88 72 - 134 Toluene-d8 (Surr) 106 80 - 120

Lab Sample ID: MB 180-195150/4

Matrix: Water

Analysis Batch: 195150

Client Sample ID: Method Blank
Prep Type: Total/NA

MB MB RL **MDL** Unit **Analyte** Result Qualifier D Prepared Analyzed Dil Fac 1,1,1-Trichloroethane $\overline{\mathsf{ND}}$ 1.0 0.27 ug/L 11/22/16 11:40 Trichloroethene ND 1.0 0.20 ug/L 11/22/16 11:40

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 97 72 - 120 11/22/16 11:40 Dibromofluoromethane (Surr) 93 77 - 127 11/22/16 11:40 1,2-Dichloroethane-d4 (Surr) 91 72 - 134 11/22/16 11:40 102 80 - 120 11/22/16 11:40 Toluene-d8 (Surr)

Lab Sample ID: LCS 180-195150/7

Matrix: Water

Analysis Batch: 195150

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1,1,1-Trichloroethane 10.0 9.75 ug/L 98 57 - 128 Trichloroethene 10.0 9.93 ug/L 99 79 - 120

LCS LCS
Surrogate %Recovery Qualifier Limits
4-Bromofluorobenzene (Surr) 99 72 - 120

TestAmerica Pittsburgh

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QC Sample Results

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical TestAmerica Job ID: 180-60977-1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-195150/7

Matrix: Water

Analysis Batch: 195150

Client Sample	ID: Lab Control Sample	9
	Prep Type: Total/NA	١

	LCS	LUS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	93		77 - 127
1,2-Dichloroethane-d4 (Surr)	88		72 - 134
Toluene-d8 (Surr)	107		80 - 120

QC Association Summary

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical TestAmerica Job ID: 180-60977-1

GC/MS VOA

Analysis Batch: 195015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-60977-1	UTM-4	Total/NA	Water	8260C	
180-60977-2	UTM-6	Total/NA	Water	8260C	
180-60977-3	UTM-7	Total/NA	Water	8260C	
180-60977-4	UTM-8	Total/NA	Water	8260C	
180-60977-5	UTM-9	Total/NA	Water	8260C	
180-60977-6	UTM-10	Total/NA	Water	8260C	
180-60977-7	UTM-14	Total/NA	Water	8260C	
180-60977-8	UTM-17	Total/NA	Water	8260C	
180-60977-9	UTM-20	Total/NA	Water	8260C	
180-60977-14	TRIP BLANK	Total/NA	Water	8260C	
MB 180-195015/8	Method Blank	Total/NA	Water	8260C	
LCS 180-195015/10	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 195150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-60977-6 - DL	UTM-10	Total/NA	Water	8260C	
180-60977-10	UTM-22	Total/NA	Water	8260C	
180-60977-11	UTM-1	Total/NA	Water	8260C	
180-60977-12	UTM-11	Total/NA	Water	8260C	
180-60977-13	UTM-23	Total/NA	Water	8260C	
MB 180-195150/4	Method Blank	Total/NA	Water	8260C	
LCS 180-195150/7	Lab Control Sample	Total/NA	Water	8260C	

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TestAmerica Pittsburgh 301 Alpha Drive

450-KOP

Chain of Custody Record

170086

THE LEADER IN ENVIRONMENTAL TESTING **TestAmerica**

TestAmerica Laboratories, Inc. TAL-8210 (0713) Sampler. M. Ketterer COCs Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) of For Lab Use Only Months Walk-in Client: Therm ID No COC No: 180-60977 Chain of Custody Archive for Corrd Company: Company Company K Disposal by Lab / Carrier: Date: Cooler Temp_(°C): Obs'd Marks Received in Laboratory by: Other Return to Client Lab Contact: 70 Regeived by: Site Contact: Received by: RCRA VJ. Perform MS / MSD (Y / N) Filtered Sample (Y/N) Regulatory Program: Dw NPDES Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Project Manager: Tow Macks 3 # of Cont. 3 M M 3 3 3 Date/Time: 11-17-16 WORKING DAYS Matrix Analysis Turnaround Time Type (C=Comp. G=Grab) PN WELLINEL Sample TAT if different from Below 2 weeks 1 week 2 days L day 1438 1653 (4+3 1149 1319 1609 Preservation Used: 1= Ice, 2= HCi; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 6001 Sample 1601 MAN 11416 1303 Time 1/15/16/1143 CALENDAR DAYS 11/1/11/11/2 Custody Seal No. と看る Poison B Marks Company: Sample Company Tel/Fax: Date 9520 UTM-22 Medica Company Name: Marks Envivormenta Pittsburgh, PA 15738 Phone: 412.963.705B Fax: 412.963.2470 Special Instructions/QC Requirements & Comments: Comments Section if the lab is to dispose of the sample. Project Name: Lake Ray 107 かまる一次で Sample Identification Client Contact UTH-30 UTH-IO UTM-IT VFM-14 ナゴロ UTH-6 Possible Hazard Identification: OTM-8 UTM-9 UTMI ールノコ Phone: (610) 286 Custody Seals Intact: 40 Relinquished by: City/State/Zip: Address:

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TestAmerica Pittsburgh 301 Alpha Drive

450-KOP

Chain of Custody Record

170091

THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc. **TestAmerica**

Sampler: M. Kattorav Sample Specific Notes: ≥ cocs Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) For Lab Use Only: .ab Sampling: Job / SDG No. Months Walk-in Client: 3 of Therm ID No. Date/Time: COC No: Archive for Corr'd: Date: | [Disposal by Lab Carrier: Cooler Temp. (°C): Obs'd Marks Bunla Received W Well Received in Laboratory by: Other: Return to Client Lab Contact: T Site Contact: 7 Received by: RCRA Perform MS / MSD (Y / N) 621 Filtered Sample (Y / N) Regulatory Program: Dw NPDES Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Marks # of Cont. M M Date/Times Company Name: Marks Environ Menta TellFax: (610) 286-0802 Address: 140 Bollinger RA WORKING DAYS Matrix Type (C=Comp, G=Grab) Project Manager: Tom Sample TAT if different from Below 2 weeks 1 week 2 days 1 day Sample 1/15/16 1620 0080 944/1 CALENDAR DAYS Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Custody Seal No. Poison B Sample Company: 3000 Collegerilled, PA Pittsburgh, PA 15238 Phone: 412.963.7056 Fax: 412.963.2470 Special Instructions/QC Requirements & Comments: Comments Section if the lab is to dispose of the sample. Sample Identification Phone: (610) 286-0 USO Client Contact TRIP BUANK UTM-23 Possible Hazard Identification: Project Name: Lake Custody Seals Intact: Refinduished by: City/State/Zip: X Non-Hazard HO4 Site: Fax

Page 20 of 21

Login Sample Receipt Checklist

Client: Marks Environmental, Inc. Job Number: 180-60977-1

Login Number: 60977 List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Watson, Debbie

orodor. Hatoon, Bobbio		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	1 vv rec broken for UTM-6
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Tel: (412)963-7058

TestAmerica Job ID: 180-61185-1

Client Project/Site: Marks, Lake Region Medical

For:

Marks Environmental, Inc. 140 Bollinger Road Elverson, Pennsylvania 19520

Attn: Mr. Tom Marks

Authorized for release by: 12/2/2016 9:41:01 AM

David Dunlap, Senior Project Manager (412)963-2432

dave.dunlap@testamericainc.com

·····LINKS ·······

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Total Access

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Job ID: 180-61185-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative 180-61185-1

Receipt

The sample was received on 11/29/2016~8:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Qualifiers

GC/MS VOA

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C

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration

MDA Minimum detectable activity **EDL Estimated Detection Limit** MDC Minimum detectable concentration MDL Method Detection Limit

MLMinimum Level (Dioxin) NC Not Calculated

Not detected at the reporting limit (or MDL or EDL if shown) ND

PQL Practical Quantitation Limit

QC **Quality Control RER** Relative error ratio

RLReporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-17

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Sample Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-61185-1	UTM-21	Water	11/25/16 14:30	11/29/16 08:30

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Method Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Lab Chronicle

Client: Marks Environmental, Inc.

Client Sample ID: UTM-21

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Lab Sample ID: 180-61185-1

Matrix: Water

Date Collected: 11/25/16 14:30 Date Received: 11/29/16 08:30

Batch Batch Dil Initial Batch Prepared Final Method **Factor Prep Type** Type Run **Amount Amount** Number or Analyzed Analyst Lab Total/NA Analysis 8260C 5 mL 5 mL 195804 11/30/16 16:56 PJJ TAL PIT Instrument ID: CHHP5

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis PJJ = Patrick Journet

Client Sample Results

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

Client Sample ID: UTM-21 Lab Sample ID: 180-61185-1 Date Collected: 11/25/16 14:30

Matrix: Water

Date Received: 11/29/16 08:30

lethod: 8260C - Volatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.91	J	1.0	0.27	ug/L			11/30/16 16:56	1
Trichloroethene	0.47	J	1.0	0.20	ug/L			11/30/16 16:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		72 - 120			•		11/30/16 16:56	1
Dibromofluoromethane (Surr)	93		77 - 127					11/30/16 16:56	1
1,2-Dichloroethane-d4 (Surr)	95		72 - 134					11/30/16 16:56	1
Toluene-d8 (Surr)	100		80 - 120					11/30/16 16:56	1

QC Sample Results

Client: Marks Environmental, Inc.

TestAmerica Job ID: 180-61185-1

Project/Site: Marks, Lake Region Medical

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-195804/6

Matrix: Water

1,1,1-Trichloroethane

Trichloroethene

Analyte

Analysis Batch: 195804

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac 1.0 0.27 ug/L 11/30/16 11:43 ND ND 1.0 0.20 ug/L 11/30/16 11:43

MB MB %Recovery Qualifier Limits Surrogate Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 87 72 - 120 11/30/16 11:43 Dibromofluoromethane (Surr) 87 77 - 127 11/30/16 11:43 91 72 - 134 1,2-Dichloroethane-d4 (Surr) 11/30/16 11:43 Toluene-d8 (Surr) 103 80 - 120 11/30/16 11:43

Lab Sample ID: LCS 180-195804/4

Matrix: Water

Analysis Batch: 195804

Client Sample ID: Lab Control Sample

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Prep Type: Total/NA

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 1,1,1-Trichloroethane 10.0 9.56 ug/L 96 57 - 128 Trichloroethene 10.0 95 9.46 ug/L 79 - 120

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 98 72 - 120 Dibromofluoromethane (Surr) 86 77 - 127 1,2-Dichloroethane-d4 (Surr) 90 72 - 134 Toluene-d8 (Surr) 107 80 - 120

QC Association Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-61185-1

GC/MS VOA

Analysis Batch: 195804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-61185-1	UTM-21	Total/NA	Water	8260C	
MB 180-195804/6	Method Blank	Total/NA	Water	8260C	
LCS 180-195804/4	Lab Control Sample	Total/NA	Water	8260C	

TestAmerica Pittsburgh	Chain	Chain of Custody Record	TestAmerica
Pittsburgh, PA 15238 Phone: 412,963.7058 Fax: 412,963,2470	Regulatory Program: Dw NPDES	C RORA Stother:	THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc. TAL-8210 (0713)
ontact	1	14	COC No:
Marks Emiron montal		lan Carrier:	i of COCs
ing	Analysis Turnaround Time CALENDAR DAYS WORKING DAYS		Sampler: For Lab Use Only:
286-0862	TAT if different from Below 2 weeks	W 12	Walk-in Client: Lab Sampling:
roject Name: R M tte: Collegeville	1 week 2 days 1 day		Job / SDG No.:
Sample Identification	Sample Sample Type (C=Comp. Date Time G=Grab) Matrix Cont.	Filtered Sar	Sample Specific Notes:
	1125/4 1430 G GV 3	1 2	
		180-61185 Chain of Custody	stody
possessivition Head: 1= los 2= HCl: 2= H2SOA: A=HMO2: E=MaOH: E= Others	R-NaOH & Other		
ossible Hazard Identification: re any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the	se List any EPA Waste Codes for the sample in the	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) e	ned longer than 1 month)
and it the lab is to dispose of the	The section of the se		
pecial Instructions/QC Requirements & Comments:	Polson b	Keturn to Client Disposal by Lab	Months
man and the state of the state			
Custody Seals Intact: Yes No	eal No.:	Cooler Temb. C. Obs'd:	
telinquished by A MM	Company: Date/Ime:1360	Company Company	11 39 16 830
elinquished by:	Company: Date/Time:	Reserved by:	Date Time:
(elinquished by:	Company: Date/Time:	Received in Laboratory by: Company:	Date/Time:

Login Sample Receipt Checklist

Client: Marks Environmental, Inc. Job Number: 180-61185-1

Login Number: 61185 List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Kovitch, Christina M

Radioactivity wasn't checked or is Radioactivity wasn't checked or is Background as measured by a survey meter. The cooler's custody seal, if present, is intact. True Sample custody seals, if present, are intact. True The cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. Cooler Temperature is acceptable. Cooler Temperature is recorded. COC is gresent. COC is filled out in ink and legible. COC is filled out with all pertinent information. Is the Field Sampler's name present on COC? True There are no discrepancies between the containers received and the COC. Samples are received within Holding Time (excluding tests with immediate HTs) Sample containers have legible labels. Containers are not broken or leaking. Sample collection date/times are provided. Appropriate sample containers are used. Sample bottles are completely filled. Sample Preservation Verified. True There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is 40mm (1/4*). Multiphasic samples are not present. Samples do not require splitting or compositing. Residual Chlorine Checked.	Creator. Roviton, Christina W		
meter. The cooler's custody seal, if present, is intact. Sample custody seals, if present, are intact. True The cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. Cooler Temperature is acceptable. Cooler Temperature is recorded. COC is present. COC is present. COC is filled out in ink and legible. True COC is filled out with all pertinent information. Is the Field Sampler's name present on COC? There are no discrepancies between the containers received and the COC. Samples are received within Holding Time (excluding tests with immediate HTS) Sample containers have legible labels. Containers are not broken or leaking. Sample collection date/times are provided. Appropriate sample containers are used. Sample Preservation Verified. True There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). Multiphasic samples and not require splitting or compositing. True MS/MSDs Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). Multiphasic samples are not present. True	Question	Answer	Comment
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MS/MSDs Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). Multiphasic samples are not present. Samples do not require splitting or compositing. True	Sample Preservation Verified.	True	
<6mm (1/4"). Multiphasic samples are not present. Samples do not require splitting or compositing. True		True	
Samples do not require splitting or compositing.		True	
	Multiphasic samples are not present.	True	
Residual Chlorine Checked. N/A	Samples do not require splitting or compositing.	True	
	Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Tel: (412)963-7058

TestAmerica Job ID: 180-63931-1

Client Project/Site: Marks, Lake Region Medical

For:

Marks Environmental, Inc. 140 Bollinger Road Elverson, Pennsylvania 19520

Attn: Mr. Tom Marks

Authorized for release by: 3/9/2017 7:45:22 AM

David Dunlap, Senior Project Manager (412)963-2432

david.dunlap@testamericainc.com

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Have a Question?



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-63931-1

Job ID: 180-63931-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative 180-63931-1

Receipt

The samples were received on 3/2/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 180-63931-1

Glossary

TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Certification Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-63931-1

Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-17

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Sample Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-63931-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-63931-1	UTM-7	Water	02/27/17 12:20	03/02/17 09:20
180-63931-2	ТВ	Water	02/27/17 08:00	03/02/17 09:20

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Method Summary

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-63931-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Lab Chronicle

Client: Marks Environmental, Inc.

Client Sample ID: UTM-7

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-63931-1

Lab Sample ID: 180-63931-1

. Matrix: Water

Date Collected: 02/27/17 12:20 Date Received: 03/02/17 09:20

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method Factor or Analyzed Type Run **Amount Amount** Number Analyst Lab Total/NA Analysis 8260C 5 mL 5 mL 204777 03/07/17 16:39 DLF TAL PIT Instrument ID: CHHP5

Client Sample ID: TB Lab Sample ID: 180-63931-2

Date Collected: 02/27/17 08:00 Matrix: Water

Date Received: 03/02/17 09:20

B T	Batch	Batch	D	Dil	Initial	Final	Batch	Prepared	A I 4	1 -1-
Prep Type Total/NA	Type Analysis	Method 8260C	Run	Factor 1	Amount 5 mL	Amount 5 mL	Number 204777	or Analyzed 03/07/17 12:39	Analyst DLF	TAL PIT
	Instrument	ID: CHHP5								

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

DLF = Donald Ferguson

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Client Sample Results

Client: Marks Environmental, Inc.

Project/Site: Marks, Lake Region Medical

TestAmerica Job ID: 180-63931-1

Lab Sample ID: 180-63931-1

Matrix: Water

Date Collected: 02/27/17 12:20 Date Received: 03/02/17 09:20

Client Sample ID: UTM-7

Method: 8260C - Volatile O Analyte	•	Qualifier	RL	MDL	Linit	D	Prepared	Analyzed	Dil Fac
Allalyte	- Result	Qualifier	KL .	MIDE	Onit		Prepareu	Allalyzeu	DII Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			03/07/17 16:39	1
Trichloroethene	ND		1.0	0.20	ug/L			03/07/17 16:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		72 - 120			•		03/07/17 16:39	1
Dibromofluoromethane (Surr)	102		77 - 127					03/07/17 16:39	1
1,2-Dichloroethane-d4 (Surr)	103		72 - 134					03/07/17 16:39	1
Toluene-d8 (Surr)	100		80 - 120					03/07/17 16:39	1

Client Sample ID: TB Lab Sample ID: 180-63931-2

Date Collected: 02/27/17 08:00 **Matrix: Water**

Date Received: 03/02/17 09:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.27	ug/L			03/07/17 12:39	1
Trichloroethene	ND		1.0	0.20	ug/L			03/07/17 12:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		72 - 120			•		03/07/17 12:39	1
Dibromofluoromethane (Surr)	96		77 - 127					03/07/17 12:39	1
1,2-Dichloroethane-d4 (Surr)	103		72 - 134					03/07/17 12:39	1

QC Sample Results

Client: Marks Environmental, Inc.

TestAmerica Job ID: 180-63931-1

Project/Site: Marks, Lake Region Medical

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-204777/6

Matrix: Water

1,1,1-Trichloroethane Trichloroethene

Analyte

Analysis Batch: 204777

Client S	Sample ID: Method	Blank
	Prep Type: To	tal/NA

MB	MB							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		1.0	0.27	ug/L			03/07/17 11:40	1
ND		1.0	0.20	ua/L			03/07/17 11:40	1

	MB N	ИB				
Surrogate	%Recovery Q	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		72 - 120		03/07/17 11:40	1
Dibromofluoromethane (Surr)	98		77 - 127		03/07/17 11:40	1
1,2-Dichloroethane-d4 (Surr)	101		72 - 134		03/07/17 11:40	1
Toluene-d8 (Surr)	98		80 - 120		03/07/17 11:40	1

Lab Sample ID: LCS 180-204777/9

Matrix: Water

Analysis Batch: 204777

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

		Spike	LCS	LCS				%Rec.
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane		10.0	9.84		ug/L		98	57 - 128
Trichloroethene		10.0	9.60		ug/L		96	79 - 120
	100 100							

ı		LUS	LUS	
	Surrogate	%Recovery	Qualifier	Limits
	4-Bromofluorobenzene (Surr)	91		72 - 120
	Dibromofluoromethane (Surr)	90		77 - 127
	1,2-Dichloroethane-d4 (Surr)	90		72 - 134
	Toluene-d8 (Surr)	97		80 - 120

3/9/2017

QC Association Summary

Client: Marks Environmental, Inc. Project/Site: Marks, Lake Region Medical TestAmerica Job ID: 180-63931-1

GC/MS VOA

Analysis Batch: 204777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-63931-1	UTM-7	Total/NA	Water	8260C	
180-63931-2	ТВ	Total/NA	Water	8260C	
MB 180-204777/6	Method Blank	Total/NA	Water	8260C	
LCS 180-204777/9	Lab Control Sample	Total/NA	Water	8260C	

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TestAmerica Pittsburgh

Chain of Custody Record

171204 THE LEADER IN ENVIRONMENTAL TESTING TESTAMETICAL LABORATORISES. INC.

Phone: 412.963.70%8 Fax: 412.963.2470	Regulatory Program:	□ DW □ NPDES	□ RCRA (Xother:		restAmenca Laboratories, inc. TAL-8210 (0713)
Client Contact	Project Manager: Torn M	Marks S	Site Contact: Tom Marks Date: 2-27	11	COC No:
OURCHARME			Lab Contact: D. DUNLAP Carrier: FR.	×	l of COCs
Bollinger Rd.	Analysis Turnaround Time	Time	24	Sa	Sampler:
SZip: 5	CALENDAR DAYS WOR	WORKING DAYS		Fo	For Lab Use Only:
6080-386-01	If from Be		Z 200 (N		
	X 2 weeks	(N	14		
Project Name: LRM Site: Collected 11 10 PA	1 week	1110	21/1 1.7t		
	1 day	Jum	/ NIS	180-63931 Chain of Custody	
Sample Identification	Sample Sample Type (C=Comp.	# of # of # of Fiftered Sa	M mohaq Pov		Sample Specific Notes:
L'mm-7	3-27-11 122 G	GW 3 N	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
7	1	NV	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
200					
.19					
4					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	5=NaOH; 6= Other				
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Pleas Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Codes for the sample in the	he sample in the	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	mples are retained lo	onger than 1 month)
Non-Hazard Flammable Skin Irritant	Poison B Unknown	UMA	Return to Client	Archive for	Months
Special Instructions/QC Requirements & Comments:					
s Intact:	Custody Seal No.:		Cooler Temp. ("C): Obs'd:	Corr'd: Th	herm ID No.:
wa	Company: F. T.	Date/Timey 700	Received by Company	A	Date/Tope-3-17919
Relinquished by:	Company:	Date/Time:	Received by: Company		Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Company:		Date/Time:

Login Sample Receipt Checklist

Client: Marks Environmental, Inc. Job Number: 180-63931-1

Login Number: 63931 List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Watson, Debbie

Creator: Watson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Appendix B

Statistical Analysis

Appendix B

Statistical Analysis for UTM-4 to Address Result Over 5 ug/L TCE

If any analytical result for a POC well is above the MCL, the first action is triggered to complete a statistical test to determine if the following is true:

If the analytical result and/or the 95% UCL calculated based on the last 8 monitoring results are below the MCL, no further action (other than routine monitoring) is needed.

The 95% UCL was calculated from the last 8 results as follows:

	UTM-4
Sampling Date/Statistical	
Parameter	TCE
5/1/14	1.7
8/1/14	0.78
11/1/14	0.6
2/1/15	0.91
5/15/15	1.6
11/3/15	0.72
2/1/16	11
11/3/16	0.46
Count (n)	8
Standard Deviation (σ)	3.58
Sample Mean (x)	2.22
95% Confidence Interval	2.48
95% Lower Confidence Limit	-0.26
95% Upper Confidence Limit	
(UCL)	4.70